PSM INSTRUMENTATION LTD

# 500C Series

# USER MANUAL

Issue B

Burrell Road Industrial Estate
Haywards Heath, West Sussex RH16 1TW, UK
Tel: +44 (0)1444 410040 Fax: +44 (0)1444 410121
Http://www.psm-sensors.co.uk E-mail: sales@psm-sensors.co.uk

Doc Ref: MAN 05

# CONTENTS

## 1.0 INTRODUCTION

Series 500C pressure transmitters are intended for applications across a wide range of processes from ultra low to medium pressure duties. Different constructions and materials are available to suit a particular duty.

- 2 Wire, 4 - 20mA output
- Standard DIN electrical connection or submersible
- Integrated electronics

## 2.0 TRANSMITTER INSTALLATION MECHANICAL

### Pre installation checks

The Transmitter is normally manufactured, calibrated and tested in accordance with the users specific requirements. It is recommended that prior to commencing installation, the specification of the instrument as supplied is checked to ensure it is in accordance with actual installation requirements. Checks should include nominal and actual ranges set, signal output, power supply requirements and process connections.

### Transmitter Mounting

The Transmitter is generally specified with the appropriate fittings to mount directly to the pipework or process plant Optional brackets are available if required.

### System Piping

The size of the process connection to the pressure chamber will depend on what was specified at the time of manufacture. Do not overtighten the pressure connection or insert any objects through the entry hole since this may result in damage to the sensitive pressure element. In general it should be ensured that the pipework and valves used are compatible with the process in terms of materials and pressure ratings. For liquid level duties long pipe runs should have a gradient to assist in clearance and line size should be $^{1}/4$" minimum. Where isolation valves are fitted they should be as close to the transmitter as practical.

## 3.0 TRANSMITTER INSTALLATION ELECTRICAL

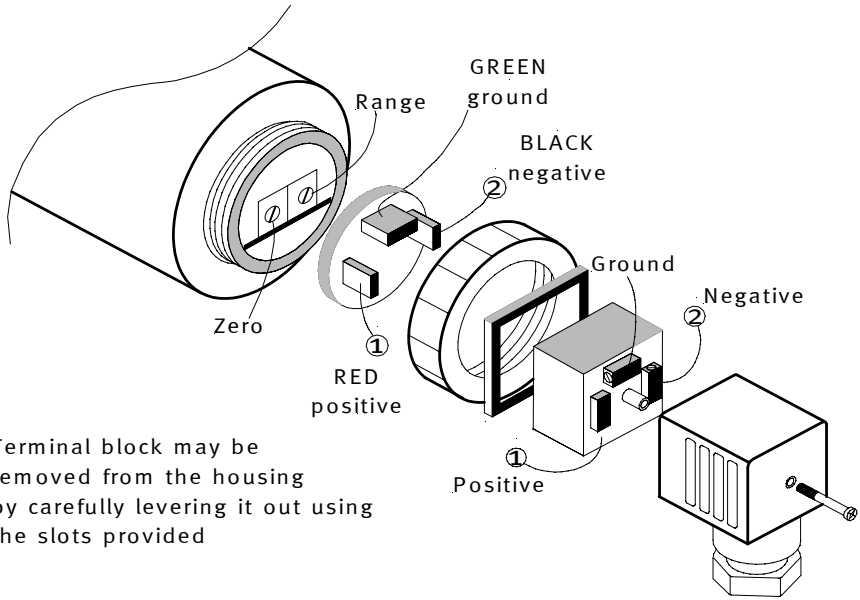
### Electrical connections

Connections are made via an industry standard DIN plug. The cabling may be of screened, flexible or mineral insulated type dependant upon the application requirements, maximum conductor size 1.5mm.

Prior to any connection it should be ensured that the supply voltage is correct for the transmitter otherwise damage may result.

Where other devices are to be included in the signal loop for 2 wire 4 to 20mA output transmitters, the total loop impedance may not exceed the figure given by the following equation

$$\text{Maximum output load} = \frac{\text{Supply Voltage} - 9}{0.002}$$



## 4.0 TRANSMITTER COMMISSIONING

Under normal circumstances the instrument will have been supplied with range and zero controls preset according to the users specifications, so, no adjustment should be necessary. However, it may be when the transmitter is installed, trimming of zero and/or range settings are necessary. It may also be that the transmitter is to be reset for a different application. Access to the zero and span adjustment potentiometers is provided by undoing the plastic locking ring at the rear of the body.

Where practical all adjustments should be made with the transmitter installed on the process and the range and zero settings validated by measurement of the output signal at 0 and 100% of the process pressure. Where it is not practical to vary the process pressure to suit, an alternative pressure source may be employed, this should be an high accuracy device such as an air driven dead weight tester, laboratory digital pressure standard, water or mercury column.

### Range & Zero adjustments

The zero should be adjusted firstly, the instrument is of the 'live zero' type therefore for when no pressure is applied the output signal should be 4.00mA. Once this is achieved the range potentiometer should be adjusted with the required max. pressure applied to the instrument until the output signal is 20mA. ( The range potentiometer operates anti-clockwise to increase the reading)

It is recommended that the zero be rechecked after range adjustment

### Routine Maintenance

The design of these transmitters is such that no routine maintenance is required except for periodic examination of gaskets and security of pressure and electrical connections

## 5.0 FAULT FINDING

These transmitters are sensitive and accurate measuring instruments and have no mechanical wearing or contacting parts. If installation procedures have been followed correctly the instrument should give satisfactory operation over a long period. In cases of failure or poor operation following installation or in normal service the following check list may assist in isolating the cause of any problems.

1 Are the range details of the transmitter correct for the duty?

2 Fully check impulse piping and wiring installation, have any leaks developed or are there any poor electrical connections?

3 Is the transmitter isolation valve (if fitted) fully in the open position?

4 Is there pressure in the process and is it of the correct order?

5 Is the correct power supply applied to the transmitter and is it actually present at the transmitter terminals?

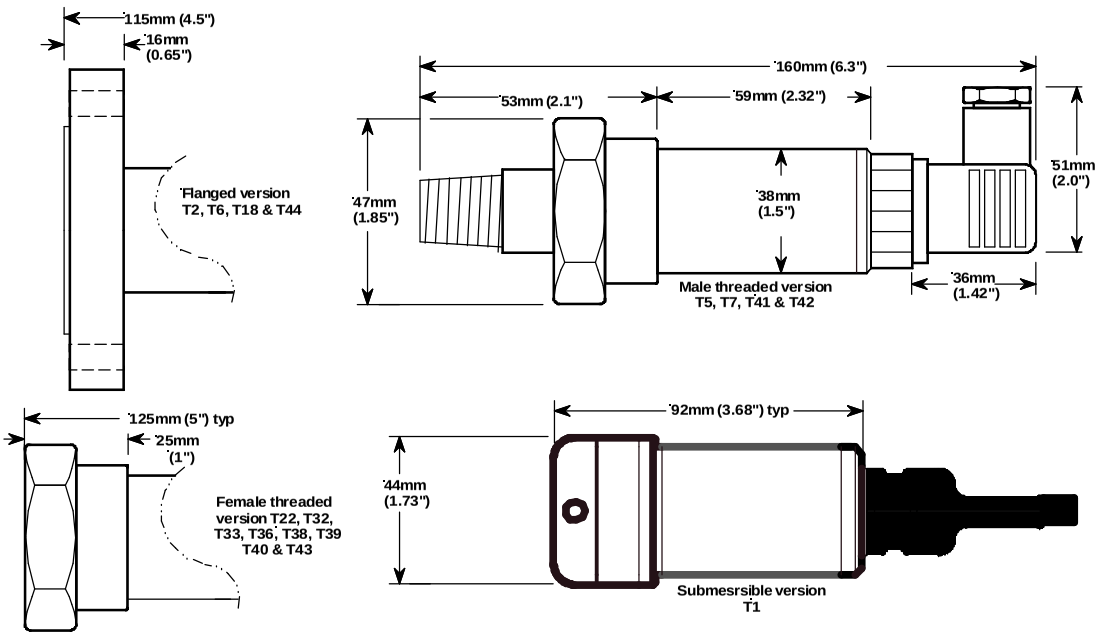
6 Check the output from the transmitter at the receiving instrument.

7 If all the foregoing are found to be in order then it will be necessary to isolate the instrument and remove it from process.

Check that no sludge or foreign matter has collected in the transmitter pressure chamber. Any deposits can normally be seen clearly at the entrance to the pressure housing. Do not use any tools or other pointed objects to clean inside the chamber, this should only be done flushing with suitable solvents

**Should the problem persist contact PSM Instrumentation**

SALES DRAWING ONLY
NOT TO BE USED FOR MANUFACTURE




| ISSUE | DATE | DRAWN | CHECKED |
|---|---|---|---|
| A | 02.11.05 | DCR | SK PC |

PSM Instrumentation Ltd

Haywards Heath,West Sussex RH16 1TW
ph: 44 (0) 1444 410040 f: 44 (0) 1444 410121
http://www.psm-sensors.co.uk

| SCALE | UNLESS OTHERWISE STATED DIMENSIONS ARE IN | TITLE | DRAWING NO | | |
|---|---|---|---|---|---|
| NTS | MILLIMETRES / ~~INCHES~~ | 500C General Outline drawing | S-001241-500-AS | A4 | SHT 1 OF 1 |

Burrell Road Industrial Estate
Haywards Heath, West Sussex RH16 1TW, UK
Tel: +44 (0)1444 410040  Fax: +44 (0)1444 410121
Http://www.psm-sensors.co.uk  E-mail: sales@psm-sensors.co.uk